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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/090,328

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Thomas J. Warnagiris

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EXAMINER

TRAN, KHANH C

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,328

Applicant(s)

WARNAGIRIS ET AL.

Examiner

Khanh Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/16/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment filed on 11/16/2006 has been entered. Claims 1, 3-10 and 12-28 are pending in this Office action.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 4, 10 and 13 have been considered but are moot in view of the new ground(s) of rejection.

3. The Amendment to the Specification has been reviewed and entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 10, 13, 19-20 and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Weddle et al. U.S. Patent 4,937,822.

Regarding claim 1, Weddle et al. invention is directed the invention is concerned with a multi-node communication system using information packets to pass information from one node to a remote node.

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Figure 1 illustrates a single node in the system. In column 3 lines 25-40, a single node including a net control block 10 supplying signals (data) to a modem 12, which also receives timing input signals from a timing block 14. The modem supplies signals to a transmitter receiver 16, which supplies outputs to antenna 18.

In column 1 line 50 via column 2 line 40; Weddle et al. teaches the primary function of the multi-node communication system is to automatically establish and maintain connectivity between nodes of the system. When properly connected, the basic modem/radio terminal can accept and deliver messages in accordance with **automated link management algorithms**. Connectivity is established and maintained through a series of protocols that search a frequency spectrum, measure the channel parameters and adaptively match transmission parameters such as data rate to the channel. A channel maintenance protocol is activated on a routine basis or whenever significant changes are sensed in the measured channel characteristics.

Connectivity is initiated with a synchronized link-up sequence in which transmission occurs on a predefined library of frequencies in the time slots associated with those neighbors for which connectivity is being sought. **The receiving node reports on the link quality of the probes in the link-up sequence as received by that node using a synchronized response on its library of frequencies. As a result of this exchange, each node knows the frequency on which reception of its transmissions was optimum as well as the relative quality of alternate frequencies.** At the conclusion of this process, the link is declared connected and ready for traffic.

The normal operation of the system presented herein employs synchronization by the participating nodes. ***A stable time reference is incorporated in each node with means to set this standard to a master reference such as radio station WWV of the National Bureau of Standards or a global positioning system (GPS) satellite*** or it may be provided via a down-line technique from a master time station within the total system. Because the system is synchronized through an externally stable external time reference, e.g. radio station WWV of the National Bureau of Standards or a global positioning system (GPS) satellite, the nodes communicate over the selected link (channel) using coherent modulation without using a modem training interval.

Regarding claim 4, as recited in claim 1, the system is synchronized through an externally stable external time reference, e.g. radio station WWV of the National Bureau of Standards or a global positioning system (GPS) satellite.

Regarding claim 10, claim 3 is rejected on the same ground as for claim 1 because of similar scope.

Regarding claim 13, claim 13 is rejected on the same ground as for claim 4 because of similar scope.

Regarding claim 19, claim 19 is rejected on the same ground as for claim 1 because of similar scope.

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Regarding claim 20, claim 20 is rejected on the same ground as for claim 13 because of similar scope.

Regarding claim 26, as recited in claim 1, a stable time reference is incorporated in each node with means to set this standard to a master reference such as radio station WWV of the National Bureau of Standards or a global positioning system (GPS) satellite. In view of that, each node including an automated link management controller receive a stable time reference as a backup.

Regarding claims 27-28, Weddle et al. teachings apply to high frequency (HF) radio signals; see column 1, lines 15-30.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle et al. U.S. Patent 4,937,822 as applied to claim 1 above and further in view of Ross U.S. Patent 5,166,977.

Regarding claim 3, claim 3 is rejected on the same ground as for claim 1 because of similar scope. Weddle et al., however, does not teach the link quality analysis conducted according to the requirements of MIL-STD-188-141A as claimed by Applicants.

In column 1 lines 25-50, Ross discusses in another US Patent the military standard 188 (MIL-STD-188) existing to cover tactical and long-haul communication system technical standards. For military applications, because of the requirements of military standard 188, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Weddle et al. teachings can be modified so that the link quality analysis can be performed according to the requirements of MIL-STD-188-141A.

Regarding claim 12, claim 12 is rejected on the same ground as for claim 3 because of similar scope.

6. Claims 5, 14 and 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle et al. U.S. Patent 4,937,822 as applied to claim 1 above and further in view of LaPadula, III et al. U.S. Patent 5,535,237.

Regarding claim 5, claim 5 is rejected on the same ground as for claim 1 because of similar scope. Weddle et al., however, does not teach the external frequency reference derived from a double sideband residual carrier signal as claimed by Applicants.

LaPadula, III et al. discusses a double sideband GPS signal in column 1 lines 60-67 in another US Patent. Because Weddle et al. teaches a stable time reference derived from a global positioning system (GPS) satellite, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Weddle et al. teachings can be modified to derive a stable time reference from the double sideband GPS signal as discussed in LaPadula, III et al. invention.

Regarding claim 14, claim 14 is rejected on the same ground as for claim 5 because of similar scope.

Regarding claim 21, claim 21 is rejected on the same ground as for claim 14 because of similar scope.

7. Claims 6, 8, 15, 17, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle et al. U.S. Patent 4,937,822 as applied to claim 1 above and further in view of Pikula et al. U.S. Patent 6,269,055 B1.

Regarding claim 6, claim 6 is rejected on the same ground as for claim 1 because of similar scope. Weddle et al., however, does not teach the external frequency reference derived from a 60 khz carrier frequency signal.

In column 5 lines 45-65, Pikula et al. discusses the broadcast reference time signal is the WWVB 60 kHz signal, which is broadcast from Fort Collins, Colo. Because the WWVB 60 kHz signal is standard and Weddle et al. teaches utilization of a stable time reference derived from the radio station WWV of the National Bureau of Standards,

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one of ordinary skill in the art at the time the invention was made would have recognized that Weddle et al. teachings can receive the WWVB 60 kHz signal.

Regarding claim 8, claim 8 is rejected on the same ground as for claim 6 because of similar scope.

Regarding claim 15, claim 15 is rejected on the same ground as for claim 6 because of similar scope.

Regarding claim 17, claim 17 is rejected on the same ground as for claim 8 because of similar scope.

Regarding claim 22, claim 22 is rejected on the same ground as for claim 15 because of similar scope.

Regarding claim 24, claim 24 is rejected on the same ground as for claim 17 because of similar scope.

8. Claims 7, 16, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle et al. U.S. Patent 4,937,822 as applied to claim 6 above and further in view of Aucsmith U.S. Patent 6,532,194 B2.

Regarding claim 7, claim 7 is rejected on the same ground as for claim 6 because of similar scope. Weddle et al., however, does not teach the external frequency reference derived from a binary-coded decimal time code as claimed by Applicants.

In column 2 line 60 via column 3 line 20, Aucsmith discusses WWVB continuously broadcasts time and frequency signals at 60 kilohertz, primarily for the continental United States. WWVB provides standard time information including the year, time intervals, daylight savings time, leap second and leap year indicators, and UT1 corrections by means of a binary coded decimal (BCD) time code. In addition, a 60-kilohertz carrier frequency provides an accurate frequency standard that is referenced to the NIST frequency standard. Because Weddle et al. teaches a stable time reference derived from the radio station WWV of the National Bureau of Standards, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Weddle et al. teachings can be modified to derive a stable time reference from the binary coded decimal (BCD) time code provided also by WWVB as discussed in Aucsmith invention.

Regarding claim 16, claim 16 is rejected on the same ground as for claim 7 because of similar scope.

Regarding claim 23, claim 23 is rejected on the same ground as for claim 16 because of similar scope.

9. Claims 9, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weddle et al. U.S. Patent 4,937,822 as applied to claim 1 and further in view of Muirhead U.S. Patent 5,420,831.

Regarding claim 9, claim 9 is rejected on the same ground as for claim 1 because of similar scope. Weddle et al., however, does not teach the external frequency reference derived from an amplitude modulated broadcast signal as claimed by Applicants.

In column 5 lines 10-30, Muirhead discusses the Time Code Broadcast is provided by the National Bureau of Standards WWVB time code transmission on 60 kHz from Fort Collins, Colo. WWVB transmits a continuous serial time code at a rate of one bit per second. The serial code contains Julian day number, hours, minutes and universal time code correction data. **The modulation is in amplitude**, consisting of a 10 dB reduction in amplitude. Because Weddle et al. teaches a stable time reference derived from the radio station WWV of the National Bureau of Standards, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Weddle et al. teachings can be modified to derive a stable time reference from the amplitude modulated broadcast signal provided by WWVB as discussed in Muirhead invention.

Regarding claim 18, claim 18 is rejected on the same ground as for claim 9 because of similar scope.

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Regarding claim 25, claim 25 is rejected on the same ground as for claim 18 because of similar scope.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh Cong Tran

01/27/2006

Examiner KHANH TRAN